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ABSTRACT

Self-teaching machines housed in trailer-classrooms were used for the third year to help 331 students in two Minneapolis Title I secondary schools improve their reading skills. A gain of one month or more in grade equivalents (using Gates-MacGinitie tests) for each month of attendance at the centers by at least 50 percent of the students was the specific objective of the project. In 1972-73 the program again more than achieved its goal. Test results showed that 85 percent of the 218 students with gain scores made grade equivalent gains in comprehension greater than gains expected for length of enrollement in the program. The median grade equivalent gain was +1.6 although the students had been on roll for less than half the school year. The project featured the use of TV-like teaching machines and educational materials developed by Dorsett Educational Systems. Machines were housed in two large trailers which were located at Bryant and North secondary schools. Although students operated the machines and tested their own progress at the end of each lesson, assistance was available from the certified reading teacher and paraprofessional who staffed each trailer. Financial support for this project came from Title I, ESEA. Several recommendations, including continuation of the project, were made. (Author)

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Minneapolis Public Schools

Mobile Learning Centers of Minneapolis 1972-73

A Title I, ESEA Project

Sara H. Clark, Title I Evaluator

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Minneapolis Public Schools

Mobile Learning Centers of Minneapolis
1972-73

Summary

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The City of Minneapolis

The program described in this report was conducted in the Minneapolis Public Schools. Minneapolis is a city of 434,400 people located on the Mississippi River in the southeastern part of Minnesota. With its somewhat smaller twin city, St. Paul, it is the center of a seven-county metropolitan area of over 1,874,000, the largest population center between Chicago and the Pacific Coast. As such it serves as the hub for the entire Upper Midwest region of the country.

The city, and its surrounding area, long has been noted for the high quality of its labor force. The unemployment rate in Minneapolis is lower than in other major cities, possibly due to the variety and density of industry in the city as well as to the high level capability of its work force. The Twin City metropolitan area unemployment rate in June of 1973 was 3.3%, compared with a 4.8% national rate for the same month. As the economic center of a prosperous region rich in such natural resources as forests, minerals, water power and productive agricultural land, Minneapolis attracts commerce and workers from throughout the Upper Midwest region. Many residents are drawn from the neighboring states of Iowa, Wisconsin, Nebraska and the Dakotas as well as from the farming areas and the Iron Range region of outstate Minnesota.

More Minneapolitans (32%) work in clerical and sales jobs than in any other occupation, reflecting the city's position as a major wholesale-retail center and a center for banking, finance and insurance. Almost as many (26%) are employed as craftsmen, foremen and operatives, and 23% of the work force are professionals, technicians, managers, and officials. One out of five workers is employed in laboring and service occupations.

Minneapolis city government is the council-dominated type. Its mayor, elected for a two year term, has limited powers. Its elected city council operates by committee and engages in administrative as well as legislative action.

Minneapolis is not a crowded city. While increasing industrial development has occupied more and more land, the city's population has declined steadily from a peak of 522,000 in 1950. The city limits have not been changed since 1927. Most homes are sturdy, single family dwellings built to withstand severe winters. Row homes are practically non-existant even in low income areas. In 1970, 48% of the housing units in Minneapolis were owner-occupied.

Most Minneapolitans are native born Americans, but about 35,000 (7%) are foreign born. Swedes, Norwegians, Germans, and Canadians comprise most of the foreign born population.

Relatively few non-white citizens live in Minneapolis although their numbers are increasing. In 1960 only three percent of the population was non-white. The 1970 census figures indicate that the non-white population had more than doubled (6.4%) in the intervening 10 years. About 70% of the non-whites are black. Most of the remaining non-white population is American Indian, mainly Chippewa and Sioux. Only a small number of residents from Spanish-surnamed or Oriental origins live in the city. In 1970 non-white residents made up 6.4% of the city's population but accounted for 15% of the children in the city's elementary schools.

Minneapolis has not reached the stage of many other large cities in terms of the level of social problems. It has been relatively untouched by racial disorders or by student unrest. Crime rates are below national averages.

One's first impression is that Minneapolis doesn't really have serious problems of blight and decay. But the signs of trouble are evident to one who looks beyond the parks and lakes and tree-lined streets. As with many other larger cities, the problems are focused in the core city and are related to increasing concentrations there of the poor, many of them non-whites, and of the elderly. For example, nine out of 10 black Americans in Minneapolis live in just one-tenth of the city's area. While Minneapolis contains 11% of the state's population, it supports 28% of the state's AFDC families.

There has been a steady migration to the city by American Indians from the reservations and by poor whites from the small towns and rural areas of Minnesota. They come to the "promised land" of Minneapolis looking for a job and a better way of life. Some make it; many do not. The American Indian population is generally confined to the same small geographic areas in which black Americans live. These same areas of the city have the lowest median incomes in the city and the highest concentrations of dilapidated housing, welfare cases, and juvenile delinquency.

The elderly also are concentrated in the central city. In 1970, 15% of the city's population was over age 65. The elderly, like the 18 to 24 year old young adults, live near the central city because of the availability of less expensive housing in multiple-unit dwellings. Younger families have continued to migrate toward the outer edges of the city and to the surrounding suburban areas.

The Minneapolis Schools

About 69,477 children go to school in Minneapolis. Most of them, about 61,052, attend one of the city's 98 public schools; 8,425 attend parochial or private schools.

The Minneapolis Public Schools, headed by Dr. John B. Davis, Jr., who became superintendent in 1967, consists of 67 elementary schools (kindergarten-6th grade), 15 junior high schools (grades 7-9), nine high schools (grades 10-12), two junior-senior high schools, and five special schools. Nearly 3,500 certificated personnel are employed.

Control of the public school system ultimately rests with a seven-member board which levies its own taxes and sells its own bonds. These non-salaried officials are elected by popular votes for staggered six-year terms. The superintendent is selected by the board and serves as its executive officer and professional adviser.

Almost 40 cents of each local property tax dollar goes to support a school system whose annual operating general fund budget in 1973-74 is $81,038,330 up from $78,992,236 in 1972-73. Minneapolis received federal funds totaling 11.8 million dollars in 1972-73 from many different federal aid programs. The Elementary and Secondary Education Act provided about 6.5 million dollars, of which 3.4 million dollars were from Title I funds. The adjusted maintenance cost per pupil unit in the system was $981 in 1971-72 while the range of per pupil unit costs in the state for districts maintaining elementary and secondary schools was from $563 to $1,324.

One of the superintendent's goals has been to achieve greater communication among the system's schools through decentralization. Initially, two "pyramids" or groups of geographically related schools were formed. First to be formed, in 1967, was the North Pyramid, consisting of North High School and the elementary and junior high schools which feed into it. In 1969 the South-Central Pyramid was formed around South and Central High Schools. Each pyramid had an area assistant superintendent as well as advisory groups of principals, teachers, and parents. The goals of the pyramid structure were to effect greater communication among schools and between schools and the community, to develop collaborative and cooperative programs, and to share particular facilities and competencies of teachers.

In the summer of 1973 decentralization was carried one step further when the entire school district, with the exception of five schools involved in an experimental program called Southeast Alternatives, was divided into three areas.

Each of these areas -- East, West and North -- is headed by a superintendent who has autonomous decision-making power within the guidelines of school district policies and philosophies.

Based on sight counts on October 17, 1972 the percentage of black American pupils for the school district was 10.6%. Eight years before, the proportion was 5.4%. American Indian children currently comprise 3.8% of the school population, more than double the proportion of eight years ago. The proportion of minority children in the various elementary schools generally reflects the prevailing housing pattern found in each school area. Although some non-white pupils are enrolled in every elementary school, non-white pupils are concentrated in two relatively small areas of the city. Of the 67 elementary schools, 11 have more than 30% non-white enrollment and four of these have over 50%. There are no all-black nor all-white schools. Twenty-three elementary schools have non-white enrollments of less than 5%.

The Minneapolis School Board has approved a desegregation plan involving busing which has operated smoothly since taking effect in September 1973.

The proportion of school age children in AFDC homes has more than doubled from approximately 12% in 1962 to 28% in 1972.

While the median pupil turnover rate for all the city schools in 1971-72 was about 24.5%, this figure varied widely according to location (turnover rate is the percentage of students that comes new to the school or leaves the school at some time during the school year, using the September enrollment as a base figure). Target Area schools generally experience a much higher turnover rate; in fact only four of the Target Area schools had turnover rates less than the city median. Compared with the city, the median for the Target Area schools was 36.1%.

The Target Area

The Target Area is a portion of the core city of Minneapolis where the schools are eligible to receive benefits from programs funded under Title I of the Elementary and Secondary Education Act (ESEA). A school is eligible to receive Title I aid if the percentage of families residing in that school's district which receives AFDC payments (in excess of $2,000 a year) -- or has an annual income under $2,000 -- exceeds the citywide percentage for families in those categories.

In 1972-73, nearly 26,871 children attended the 25 elementary schools, five junior highs, three senior highs and seven parochial schools that were eligible to receive this aid. One-third of these students were from minority groups and one-third were defined by the State Department of Education as

educationally disadvantaged, i.e. one or more grade levels behind in basic skills such as reading and arithmetic. Federal programs are concentrated on the educationally disadvantaged group.

According to 1970 census data, over 170,000 persons resided in the Target Area. Of that group, 11 percent were black and 3½ percent were Indian, more than double the citywide percentage of minority group members. Over half of the Target Area residents over 25 years old had not completed high school, compared to the 35 percent of the non-Target Area residents who did not have high school diplomas. One out of five Target Area residents over the age of 25 had gone to college, and nine percent had completed four or more years. One out of four of the non-Target Area residents had gone to college, and 15 percent had completed four or more years.

The income for an average Target Area family was $9,113 in 1970, about $2,000 less than the citywide average. The homes they lived in had an average value of $10,385, over 40 percent less than the average value of a single family residence in Minneapolis. One out of five Target Area children between the ages of 6 and 17 was a member of a family that was below the poverty level, while only 6 percent of the non-Target Area children had such a family status.

Historical Background

The school year of 1972-73 was the third year of operation of the Mobile Learning Centers. In 1970 the Minneapolis school system had recognized the need for an innovative approach to the reading difficulties of a number of secondary students in Target Area schools and had allocated funds for teaching machines. A group of teachers and administrators from the system had been impressed with the programs and machines presented by the Dorsett Educational Systems at the Aerospace Educational Technology meetings held in Washington, D.C. in January 1970. After further investigation and discussion the Mobile Learning Centers project, incorporating the Dorsett machines and programs, was initiated when funds from NDEA Title III and ESEA Title I---as well as local funds---became available. Two large trailers were bought to serve as classrooms to provide mobility for the project. The use of these Mobile Learning Centers was restricted to Title I schools because of the federal funds which helped support the project.

The project's operations were successful in increasing the rate of progress in comprehension and vocabulary of students who had been one or more years below grade level. In 1970-71, positive and definite gains in vocabulary and comprehension were made by the 240 students for whom gain scores were obtained. Their rate of progress was from two to six times that which would have been expected based on their previous achievement. All the students had been one or more years below grade level in reading skills before their selection for the program. Gates-MacGinitie tests were used. In the second year of operation the program was again more than successful in reaching its goals. Eighty percent of the students tested made grade equivalent gains in comprehension over those expected for length of instruction. Sixty-four percent made such gains on vocabulary tests. Evaluation reports on these earlier years are available.[1]

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[1] Clark, S.P. Evaluation of the Mobile Learning Centers in Minneapolis Secondary Schools, 1970-71. Minneapolis: Minneapolis Public Schools, 1972.

Clark, S.H. Mobile Learning Centers of Minneapolis, 1971-72. Minneapolis: Minneapolis Public Schools, 1973

Objectives

The general goal of this program was to raise the rate of reading growth of secondary students, in selected Title I schools, who were one or more years below grade level in reading as of September 1972. Specifically, a gain of at least one month in grade equivalents (using Gates-MacGinitie tests) for each month of attendance at the Centers by at least 50% of the students would show attainment of that objective. This specific goal would meet state requirements for Title I secondary schools. However, based on past experience it was expected that more than 50% of the students would make the specified gains.

Locations of the Mobile Learning Centers

Two Mobile Learning Centers or trailers, as they are generally called, were located in the Target Areas in 1972-73.

The South Trailer was parked at Bryant Junior High for the entire school year. Although Bryant's enrollment of nearly 1000 students was at the median for the city's junior high schools it ranked far above the city average (23%) in the percentage of students who came from homes receiving AFDC (44%). The percentage of minority students (43%) was also much higher than the average (16%) for the city's schools.

The North Trailer was stationed at North High School. North High's enrollment of nearly 1500 students had 42% of its students from AFDC homes. Its minority population (38%) was the highest in the city for senior high schools. According to the 1970 census, roughly one third of the people in the North neighborhood had moved into their present dwellings within the past fifteen months; 43% of the persons under 18 were not residing with both parents and 12% of those between the ages of 16 and 21 were neither employed nor in school.

Bryant and North have been Title I schools every year since 1965-66 when the Title I (ESEA) funds first became available.

Project Operations

Two large trailers, about 60 feet by 14 feet, were purchased with the aid of NDEA, Title III, money. Each trailer contained 18 Dorsett teaching machines in semi-private carrels or booths. Students were assigned to the program for one period a day. Length of assignment varied depending on school scheduling and the student's progress. Both trailers were carpeted and air-conditioned. Each trailer had an inviting reading corner with a lounge and table with magazines of high interest level for the students who attended.

Dorsett machines look something like TV sets. Lessons are projected on screens from film strips which are sound synchronized with records. Headphones are available for individual listening. The machines are simple to operate so that students can change the records and filmstrips themselves. Pupils respond to questions in the lesson by pushing buttons which allow either multiple or forced choice options. When the correct response is given, the machine proceeds to the next frame in the program. Students are also furnished with a printed version of the lesson called a Reading Panel. The Reading Panel contains the story being presented on the screen to which a student can refer at any time. The panel gives the student a chance to reread the material at his own rate of speed and it gives him another opportunity to assimilate the program before attempting to respond to questions on the machine.

At the end of each filmstrip a progress check is given which consists of multiple choice questions. Each check contains from five to ten questions. In this way the student's understanding of each lesson is measured as soon as he completes the instruction. Since the test is scored immediately, the teacher can either provide verbal reinforcement and encouragement for good work or, if the student has scored less than 80%, help him find his errors before he repeats the lesson. If he has made only one or two mistakes he can use the Reading Panel to help make his corrections. This use of the panel incidentally gives him practice in scanning. A score of 100% is necessary before a student can advance to another program.

The reading course includes programs in vocabulary and comprehension. A curriculum guide provided with the materials states that in the comprehension programs, "The questions are designed to develop reading skills such as recalling details and facts, understanding main ideas and sequence of events, drawing conclusions, and finding and understanding key sentences and words." Programs in this series cover first through eighth grade materials. Vocabulary programs begin with a series which includes 800 sight words in sentences and continues through eighth grade words. Additional units have been added to the original course so materials are available for a whole semester's work.

The program is flexible. Students can work at their own rate. The average time needed to complete a lesson with 100% accuracy is about twelve minutes so that a student can complete up to three programs each day. Usually a number of comprehension programs are presented first; later they are alternated with the vocabulary programs which the students find less interesting. The use of the machines, with their headphones, captures the pupils' attention to the extent that they generally ignore visitors who come to observe the project in operation.

Although the students operate the machines themselves there have been relatively few problems with the hardware.

Participants

Students were selected for the program by counselors and teachers who based their recommendations mainly on the students' city-wide reading test scores. The pupils were either one or more years below grade level or below the twenty-fifth percentile on Minneapolis reading norms and hence were eligible for Title I programs. A total of 331 students were enrolled at some time during 1972-73. The pupils came from grades 6-9 at Bryant and 9-12 at North. About 10% of the student population at Bryant was in the project; at North 16% of the students were enrolled.

The boys (62%) outnumbered the girls (38%) at Bryant, but the sexes were about evenly divided at North. Enrollment figures for the project, by school and grade, are given in Table 1.

Table 1

Enrollment in Mobile Learning Centers
by School and Grade
1972-73

School and Grade	School Enrollment[a]	Number Enrolled in Center	Percent of School Total
Bryant			
6	84	1	1.2%
7	310	14	4.5
8	288	60	20.8
9	294	17	5.8
All Grades	976	92	9.4%
North			
9	101	16	15.8%
10	601	116	19.3
11	415	70	16.9
12	277	35	12.6
Special	81	---	----
Unknown	---	2	----
All Grades	1475	239	16.2%

[a]Informational Services Center. Pupil Sight Count, 1972-73. Minneapolis: Minneapolis Public Schools, 1972. (Sight count taken October 17, 1972.)

Personnel

Each trailer was staffed at the beginning of the year with a certified reading teacher and a paraprofessional, both of whom had received inservice training on the use of the Dorsett materials and machines. During the second semester the teacher at Bryant worked without an aide which caused fewer problems than might have been expected since students had not been scheduled to the full capacity of the trailer.

Although the Dorsett units are self-instructional, the teachers selected the programs for each student according to his needs. In addition they gave instruction and assistance to students who had difficulties with particular lessons. The aides helped the students also and assisted the teacher in scoring the progress checks which the students completed after each lesson. Keeping student records and arranging for machine maintenance were other responsibilities of the aides. No supplemental services were contributed by non-staff members.

Parent and Community Involvement

Open houses were held at the trailers when similar events were sponsored by the PTA's at the respective schools. There was, otherwise, no direct parental involvement in this program.

Planning and Training

Little new planning or training was needed for the 1972-73 school year although instruction to the staff was given concerning the implementation of new programs which were added to the course.

Budget

This project received $49,864 from Title I funds. This amount covered all costs of the program. Eighty-five percent of this money was budgeted for salaries and fringe benefits. Since 331 students were served at different times during the year, the average cost per pupil was $151.

Tests Used

Gates-MacGinitie Reading Tests of comprehension were used for assessing student gains. Level D, designed for grades 4-6, was used at the junior high school and Level E, intended for grades 7-9 was used at the senior high school. These tests were selected because they reflected the actual reading levels of the students rather than their school grade placement.

The tests were used each school quarter at North High. At Bryant the scheduling was more flexible and students were tested whenever they entered or left the program. According to the test's publisher, the comprehension section "measures the student's ability to read complete prose passages with understanding." Different forms of the tests from those used in the city-wide testing program were administered.

Evaluation Group Definition

The group on which the evaluation was based consisted of those pupils for whom both pre- and posttest data were available. No other criteria were used for their selection. Comparisons between the "evaluation group" and the "incomplete data group" may be made based on the descriptive data in Table 2.

Table 2

Evaluation Group and Incomplete Test Data Group
Descriptive Data by Schools

	Bryant (N = 92)		North (N = 239)	
	Evaluation Group (N = 76)	Incomplete Data Group (N = 16)	Evaluation Group (N = 142)	Incomplete Data Group (N = 97)
Ave. Days Present	56	30	37	16
Range	18 - 87	2 - 74	16 - 80	1 - 82
Ave. Days Absent	9	30	8	27
Ave. Days on Roll	65	60	45	43
Attendance Rate	86%	50%	82%	37%
Ave. No. Programs Done	142	69	97	41
Range	32 - 176	3 - 160	10 - 146	0 - 111
Ave. No. Per Day	2.5	2.3	2.6	2.6
Comprehension Pretest G.E. of Ave. Raw Score	5.2	4.6	5.5	5.5[a]
Male	48	9	76	49
Female	28	7	66	48
Average Age	13.34	13.62	15.81	16.41

[a] N = 79

At the Center at North, where 40% of the pupils did not have complete data, the main reason for the lack of information was truancy. The attendance rate of those with missing data was only 37%, compared with 82% for those in the evaluation group. The overall attendance rate at North High for 1972-73 was 81%. At North there were also some students who were not tested at the request of the school staff for various reasons including emotional problems. The average pretest scores showed both groups reading at the 5.5 grade level. The students in the incomplete data group completed, on the average, the same number of programs for each day of attendance as did those in the evaluation group.

At the Bryant Center 17% of the students had incomplete test data. Their attendance rate was 50%, the rate for the evaluation group was 86%, and the rate for Bryant as a whole was 89%. The average pretest scores for these junior high students was as expected, lower than at North and there were differences between the two groups. The average for the evaluation group was 5.2 grade level while the incomplete data group averaged 4.6. The incomplete data group also completed slightly fewer programs per day than did the evaluation group.

The smaller number of students who attended the Bryant Center compared with North was partly because the Bryant students were enrolled for a longer period of time. There were also scheduling problems at Bryant and no teacher aide was available for half the year.

Results

The Mobile Learning Centers project again more than met its stated objectives of having at least 50% of the students make a gain of at least one month in grade equivalents on the Gates-MacGinitie comprehension test for each month's enrollment. Combined results from Bryant Junior and North High Schools (N = 218) showed that 85% of the students gained three or more

grade equivalent months in their average of three months on roll (see Table 3). The median grade equivalent gain was +1.60 which was well above expectation for the average of three months in the program.

There was little difference between the two schools in the percentages of students who gained more than would have been expected for the length of time on roll (see Tables 4 and 5). At Bryant, where the average enrollment was 4 months, 86% of the students made gains over expectation. At North, 84% of the students made gains of 3 months or more in their 3 months on roll. Note that these figures for months on roll are rounded up from .36 school year at Bryant and .25 school year at North so the given results are conservative figures.

Attitudes Toward Reading

Attitudes toward reading were measured at the Bryant Center in the fall and again in the spring. The scale (Appendix A) which was used (with a change in one question) had appeared in the Journal of Reading[2] with the assurance that users were free to modify it. Instructions were read to the students for marking the scale. They were also told not to put their names on their papers.

There was no attempt to measure attitudinal change since the group of students in the spring was different from that in the fall. This was due to the turnover of the student population and also to the anonymity assured the respondents.

The average scores of both groups did not significantly differ from each other. In general the scores indicated that the students had slightly positive attitudes toward reading. A completely neutral score on the scale would be 60. The average for the group in the fall was 69.7 and for the spring group it was 68.3. The questions about which the students had the most positive feelings were, "Reading is a good way to spend spare time" (agree), "Books should not be read except for class requirements" (disagree), and "Reading

[2]Estes, T.H. A scale to measure attitudes toward reading. Journal of Reading, November 1971, 135-138.

Table 3

Grade Equivalent Gains Distribution
Gates-MacGinitie Reading Test
Comprehension [a]
Bryant and North
1972-73

Grade Equivalent Gains	N	%	Cum. %
+3.0 or more	43	19.7	20
+2.5 to +2.9	16	7.3	27
+2.0 to +2.4	30	13.8	41
+1.5 to +1.9	29	13.3	54
+1.0 to +1.4	24	11.0	65
+.9	6	2.7	68
+.8	7	3.2	71
+.7	3	1.4	72
+.6	8	3.7	76
+.5	4	1.8	78
+.4	8	3.7	82
+.3	8	3.7	85
+.2	8	3.7	89
+.1	0	0.0	89
0	7	3.2	92
-.1 to -.5	9	4.1	96
-.6 or less	8	3.7	100
Total	218	100.0%	

Median grade equivalent gain: +1.60

Mean attendance: 43 days or .24 school year

Mean number of days on roll: 52 days or .29 school year

95% of the students gained 3 or more grade equivalent months in the average of 3 months on roll.

[a] Bryant: Form D2M; North: Form E2

Table 4

Grade Equivalent Gains Distribution
Gates-MacGinitie Reading Test
Comprehension, Form D2M
Bryant, 1972-73

Grade Equivalent Gains	N	%	Cum. %
+3.0 or more	17	22.4	22
+2.5 to +2.9	7	9.2	32
+2.0 to +2.4	7	9.2	41
+1.5 to +1.9	12	15.8	57
+1.0 to +1.4	9	11.9	68
+.9	3	3.9	72
+.8	1	1.3	74
+.7	0	.0	74
+.6	4	5.3	79
+.5	0	.0	79
+.4	5	6.6	86
+.3	2	2.6	88
+.2	3	3.9	92
+.1	0	.0	92
0	1	1.3	93
-.1 to -.5	3	3.9	97
-.6 or less	2	2.6	100
Total	76	99.9%	

Median grade equivalent gain: +1.65

Mean attendance: 56 days or .31 school year

Mean number of days on roll: 65 days or .36 school year

86% of the students gained 4 or more grade equivalent months in the average of 4 months on roll.

Table 5

Grade Equivalent Gains Distribution
Gates-MacGinitie Reading Test
Comprehension, Form E2
North High, 1972-73

Grade Equivalent Gains	N	%	Cum. %
+3.0 or more	26	18.3	18
+2.5 to +2.9	9	6.3	25
+2.0 to +2.4	23	16.2	41
+1.5 to +1.9	17	12.0	53
+1.0 to +1.4	15	10.6	63
+.9	3	2.1	66
+.8	6	4.2	70
+.7	3	2.1	72
+.6	4	2.8	75
+.5	4	2.8	78
+.4	3	2.1	80
+.3	6	4.2	84
+.2	5	3.5	87
+.1	0	.0	87
0	6	4.2	92
-.1 to -.5	6	4.2	96
-.6 or less	6	4.2	100
Total	142	99.8%	

Median grade equivalent gain: +1.5

Mean attendance: 37 days or .20 school year

Mean number of days on roll: 45 days or .25 school year

84% of the students gained 3 or more grade equivalent months in the average of 3 months on roll.

is something I can do without" (disagree). They tended to disagree with "Reading turns me on", and "A certain amount of summer vacation should be set aside for reading", and tended to agree that "Reading becomes boring after about an hour."

Discussion

The program at the Mobile Learning Centers has again been effective in improving the reading ability of those it served. The students who attended the Centers had been selected by teachers and counselors, on the basis of previous test scores and performance, as those in their schools who were most in need of the individualized reading assistance offered by the program. The grade equivalent of the average pretest raw score at the junior high was 5.0; at the senior high it was 5.5.

The Center at Bryant was not used to full capacity in 1972-73, partly because of problems in selection and scheduling. Two-thirds of the Bryant students at the Center were in the eighth grade. At North, the selection process had been well worked out so that full use was made of the Center and each grade was proportionately represented in attendance.

Below grade level testing was again used so that the tests were appropriate to the students' reading levels rather than their actual grade levels. Since the Gates-MacGinitie tests were standardized at grade level perhaps the gains reported here should be viewed with some caution. However, even a conservative interpretation of the outcome of the Centers' program indicates that the program was effective in meeting its objective of raising the rate of reading growth of secondary students in the Title I schools which it served.

Recommendations

1. Other things being equal, continue the Mobile Learning Centers program since, for three years, it has consistently been effective in meeting its goals. This recommendation assumes that the goal of raising the rate of reading growth of students who are one or more years below grade level is a worthwhile objective and should be given a high priority in the educational process.
2. Investigate the possibility of using criterion-referenced testing as an alternative to below grade level use of standardized tests.
3. Improve selection and scheduling processes so that the Centers are used to full capacity.